**Science in a Bag – Teacher Page**

**Plant Structures**

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**Grade Level-** 1st Grade

**Standards**

GLE 0107.1.2 Use tools to examine major plant structures.

0107.1.2 Communicate the effects of using tools like magnifiers when examining different body parts.

0107.1.3 Make diagrams to record and communicate observations.

**Task Objective**

Students will also be able to use a microscope to look at parts of multiple leaves and identify major plant structures such as the root and stem. They will be able to compare and contrast with and without the tool to see what differences they observed.

**Explanation**

* This activity is to show that plant structures are all around us. Tools, such as microscopes, play a tremendous role in our everyday life. Students should be able to compare and contrast multiple leaves and different plant structures. Students will use a data table to draw a picture of the differences they see and use context clues to match up pictures with definitions in the card sort activity.
* Students will be able to compare and contrast using a data table of each item observed. They will write down what they see without the microscope and with the microscope.

**Academic Vocabulary**

Green- most plants are this color

Plants- this is usually a flower, leaf, plant, root, or seed

Tool- instrument used to make really small objects look bigger by magnifying them.

Plant structures- any part of a plant

Physical characteristics- Physical traits such as color and texture.

Stem- The main ascending part of a plant; a stalk

Root- The underground part of a plant that doesn’t have buds or leaves. The roots serves as support for the leaf.

* #8 Concept Card Mapping- The students will be given cards with written concepts on them. They will move the cards around and arrange them as a connected web of knowledge. Each student will also get 2 blank cards to write down and make their own connection on their own. The mapping will promote discussion and students will be more aware of their own ideas. This Formative Assessment Classroom Technique provides an open entry because there is no right answer.
* #4 Card Sorts- Vocabulary Match Up. Students will match the definition with the picture to get a better understanding of the vocabulary used in the lesson. This will show what vocabulary words that the student knows and what words the student needs helping in understanding.

**Common Misconceptions**

* All plants have the same shape of leaf.
* Plants have the same texture.
* Plants get what they need to grow only through their roots.
* Plants are not alive.
* Only leaves take in water.
* Plants get their energy from the soil through roots.
* People think that the stem is not part of the plant.

**Real World Connection**

Students will be able to think of other items that they would want to look at under a microscope. They could also bring in their own plant leaf to see what it looks like under the microscope. Students will be able to relate microscopes to magnifying glasses in the real world.

**Connections Across the Curriculum**

Language Arts

* CCSS.ELA-LITERACY.L.1.4

Determine or clarify the meaning of unknown and multiple meaning words and phrases based on grade 1 reading and content, choosing flexibly from an array of strategies.

* Students could use context clues to find out the meaning of new vocabulary within the lesson.

Math

CCSS.Math.Content.1.G.A.3

Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

* Students could look at fractional parts of the leaves, such as halves. This would give students a visual of what fractions mean such as halves, fourth, and quarter.

Language Arts

* CCSS.ELA-LITERACY.W.1.8

With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

* In literacy, teachers could have the students write in their interactive notebook about the microscope experience with the leaves and talk about new experiences they learned about.

**References**

The common misconceptions come from this website

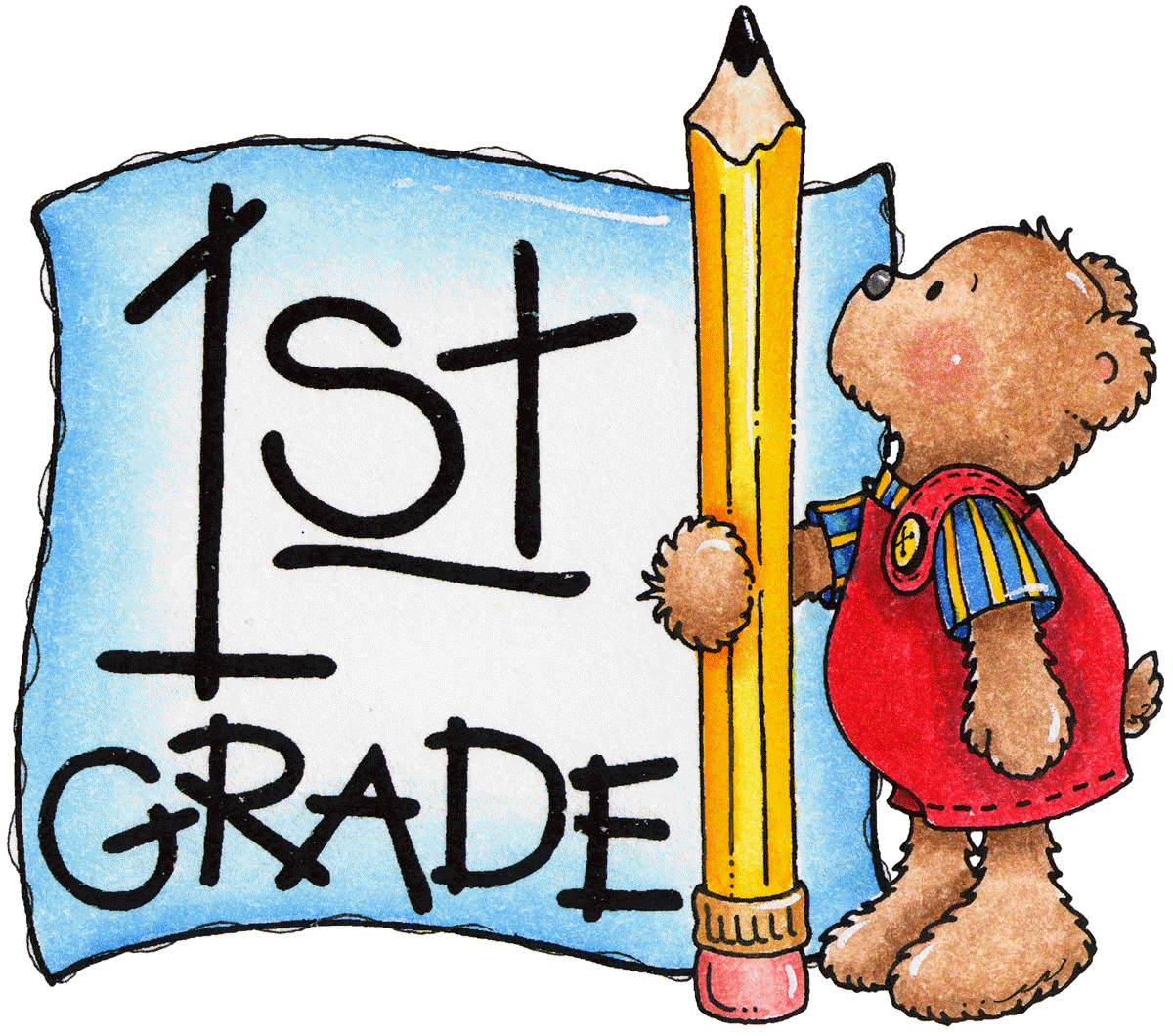
* <http://beyondpenguins.ehe.osu.edu/issue/polar-plants/common-misconceptions-about-plants>

Pictures

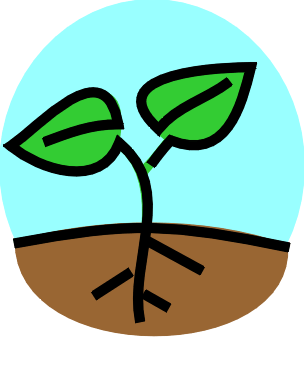
* [www.google.com](http://www.google.com)

FACT Ideas

* <http://www.uncoveringstudentideas.org/books/facts>

**Science in a Bag – Student Page**  

**Plant Structures and Animals**



**Grade Level** - First Grade

**Standards**

GLE 0107.1.2 Use tools to examine major body parts and plant structures.

0107.1.2 Communicate the effects of using tools like magnifiers when examining different body parts.

0107.1.3 Make diagrams to record and communicate observations.

**Task Objective**

Students will also be able to use a microscope to look at parts of multiple leaves and identify major plant structures such as the root and stem. They will be able to compare and contrast with and without the tool to see what differences they observed.

**Materials Needed**

Pencil

Date table for each item being observed

Concept Card Mapping (Index cards work great!)

Vocabulary Match Up Cards

Microscope

Tree leaf

Flower plant leaf

Grass root

Stem on the leaves

Tape

Interactive Journal

**Procedures**

1. After setting out the Concept Card Mapping, you will work with your group to move the cards around and arrange them with words that are connected. Work with your group! Talk about the connections you see and what they mean. Why did you pick that particular card as a connection?
2. You have 2 blank cards- individually write down two connections of your own. Tape in your interactive notebook and label “plant concept card map.”
3. Get the bag labeled “Card Sort” and match the vocabulary with the definition. Do you see a connection among the cards? What are we learning about?
4. Write your name on the “data table” handout. You will be looking at two different leaves, the stem, and roots.
5. With your eyes, write down and draw what you see on the data table.
6. Get microscope out. Look at different parts of the leaves, root, and stem. Observe what you see with the microscope.
7. Answer these questions in your interactive notebook:

Could you see the plant structures better with or without the microscope?

Do all leaves look the same?

1. Talk about your observations with your group. What other ways can you look at items close up?
2. Again, take out the bag labeled “sort cards” and work individually to match the definitions with the correct vocabulary word/pictures. Tape this in your interactive notebook ☺
3. Clean up time!

**Academic Vocabulary**

Green- most plants are this color

Plants- this is usually a flower, leaf, plant, root, or seed

Tool- instrument used to make really small objects look bigger by magnifying them.

Plant structures- any part of a plant

Physical characteristics- Physical traits such as color and texture.

Stem- The main ascending part of a plant; a stalk

Root- The underground part of a plant that doesn’t have buds or leaves. The roots serves as support for the leaf.

* #8 Concept Card Mapping- The students will be given cards with written concepts on them. They will move the cards around and arrange them as a connected web of knowledge. Each student will also get 2 blank cards to write down and make their own connection on their own. They will then write their own connections in their interactive notebook. The mapping will promote discussion and students will be more aware of their own ideas. This Formative Assessment Classroom Technique provides an open entry because there is no right answer.
* #4 Card Sorts- Vocabulary Match Up. Each student will get their own bag of cards to match the definition with the picture to get a better understanding of the vocabulary used in the lesson. This will show what vocabulary words that the student knows and what words the student needs helping in understanding.

**Assessment**

* #8 Concept Card Mapping- The students will be given cards with written concepts on them. They will move the cards around and arrange them as a connected web of knowledge. Each student will also get 2 blank cards to write down and make their own connection on their own. The mapping will promote discussion and students will be more aware of their own ideas. This Formative Assessment Classroom Technique provides an open entry because there is no right answer.
* #4 Card Sorts- Vocabulary Match Up. Each student will get their own bag of cards to match the definition with the picture to get a better understanding of the vocabulary used in the lesson. This will show what vocabulary words that the student knows and what words the student needs helping in understanding.

Students have a misconception thinking that the stem is not part of the plant.

**Clean-up** 

* Put leaves and plant structures back in bag.
* Leave microscope by box for next group.
* Tape completed data table and word sort cards in your interactive

notebook.

**Data Table Handout**

**Plant Structure Data Table- With Microscope**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |
| --- |
| **Data Table**  *Sketch your data table below.* |

|  |
| --- |
| **Tree Leaf** |
| **Flower Plant Leaf** |
| **Grass Root** |
| **Stem on leaf** |

**Data Table Handout**

**Plant Structure Data Table- Without Microscope**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |
| --- |
| **Data Table**  *Sketch your data table below.* |

|  |
| --- |
| **Tree Leaf** |
| **Flower Plant Leaf** |
| **Grass Root** |
| **Stem on leaf** |

Vocabulary Word Sort (sentence strips and pictures)

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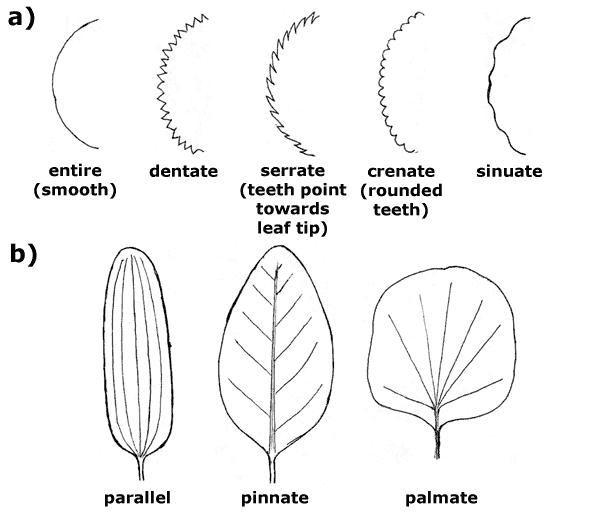
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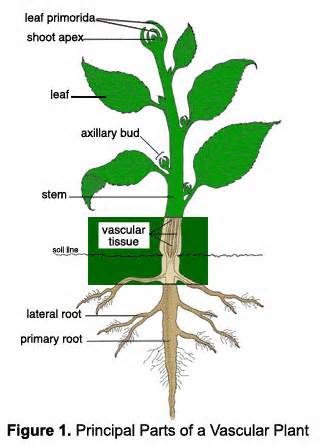
Root- The underground part of a plant that doesn’t have buds or leaves. The roots serves as support for the leaf.











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